DOCUMENT RESUME

ED 338 043 FL 019 704

AUTHOR Cheung, Sik Lee
TITLE The Acquisition of Locative Constructions in Cantonese Children.
PUB DATE Jul 90
NOTE 9p.; In: Papers and Reports on Child Language Development, Number Twenty-nine. California, Stanford University, 1990. p20-27.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Age Differences; *Cantonese; Foreign Countries; *Grammar; *Language Acquisition; Language Research; Linguistic Theory; *Spatial Ability; Uncommonly Taught Languages; Young Children
IDENTIFIERS China; *Locatives; *Word Order

ABSTRACT

A study investigated how Cantonese children acquire word order in the locative system, which is very complex in their native language. Focus was on three semantic categories: static location, locative source, and locative goal. Subjects were 32 monolingual Cantonese children aged 2.5 to 5.9 in four age groups. Each subject performed four tasks, two to test comprehension of the three locative constructions and two to elicit production data for those three constructions. Results indicate that 2-year-olds did not use word order to differentiate among the three locatives in comprehension; older children could use word order to contrast the three kinds of locatives. Older children's errors tended to occur with test sentences that contained transitive verbs such as "push" and "throw." As expected, transitive sentences were harder for the children than intransitives. It was also found that directional verbs played an important role in the children's comprehension of spatial relations and that the 2-year-olds also did not use word order to contrast the locative forms in production. Almost all of their spontaneous locatives were postverbal. The 3-year-olds showed considerable variability here. The older children did use relevant word order contrasts in production. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

PRCLD 29 (1990)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED338043

The Acquisition of Locative Constructions in Cantonese Children

Sik Lee Cheung
Stanford University

1 The Static Location, the Locative Source and the Locative Goal

This paper reports on the first systematic study of how Cantonese children acquire the locative system in their first language. The locative system in Cantonese is very complex. Three semantic categories turn out to be most important in the language. They are the static location, the locative source and the locative goal. The static location (LOC_{at}) is defined as the location at which a state or an event takes place, e.g., "He's walking around in the library" and "It's jumping up and down on the bed." The locative source (LOC_{from}) is the starting point of a moving entity whereas the locative goal (LOC_{to}) is the end-point of a moving entity, e.g., "It's jumping off the chair" and "It's jumping onto the table" respectively. Examples in Cantonese are shown in (1) and (2) below.

(1) *wou-wou* ***hei*** ***zêng-toi*** ***guo-dou*** *tiu*
dog LocCvb CL-table there jump
"The dog is jumping (up and down) on the table."

(2) *wou-wou* ***hei*** ***zêng-yi*** ***guo-dou*** *tiu-sêng* ***zêng-toi*** ***guo-dou***
dog LocCvb CL-chair there jump-up CL-table there
"The dog is jumping from the chair onto the table."

In (1), the *hei zêng-toi guo-dou* meaning "on the table" occurs before the main verb *tiu* "jump" and is a LOC_{at}. In (2), *hei zêng-yi guo-dou* and *zêng-toi guo-dou* are a LOC_{from} and a LOC_{to} respectively.

In English all three locative phrase types usually follow the main verb, and are distinguished mainly by prepositions. In Cantonese, these categories are differentiated in a number of ways, one of the major ones being word order. As illustrated in (1) and (2) above, LOC_{at} and LOC_{from} precede the main verb, but LOC_{to} follow the main verb. However word order does not suffice to distinguish LOC_{at} from LOC_{from} since both occur preverbally. The verb gives additional clues: the main verb tends to be followed by directional verbs such as "go", "come", "up" and "down" in the case of LOC_{from}.

2 Subjects

Thirty-two monolingual Cantonese children aged 2;5 to 5;9 in Hong Kong were tested. The children formed four groups: (1) 2;1 to 2;5 (mean age: 2;3); (2) 3;0 to 3;5 (mean age: 3;3); (3) 4;1 to 4;9 (mean age: 4;3); (4) 5;0 to 5;9 (mean age: 5;4). There were four boys and four girls in each group. They all spoke Cantonese as their first language. Data were also collected from eight adult Cantonese speakers.

3 Tasks

Each subject was asked to perform four tasks, two of them designed to test their comprehension of the three locative constructions and the other two designed to elicit

FL019704

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Eve Clark
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

production data for these three constructions. The order of the tasks was randomized for each subject. The four tasks were completed in four to six interviews with the two-year-olds and in two to three interviews with the older children.

3.1 Comprehension Tasks

3.1.1 Experimental Design

The two comprehension tasks were two-factor experiments with repeated measurements. The two independent variables are age and position of LOC. The age factor had five levels: two-, three-, four-, and five-year-olds, and adults. The position factor had two levels - preverbal and postverbal. In one task, the preverbal LOC was LOC_{at} and the postverbal LOC was LOC_{to}. In the other task, the preverbal LOC was LOC_{from} and the postverbal LOC was LOC_{to}. The dependent variable was the subjects' response to the test items with each correct response being given a score of one point.

3.1.2 Test Items

Motion verbs such as "jump" and "fly" and displacement verbs such as "spill" and "push" were used in these tasks. The advantage of using these kinds of verbs, as opposed to verbs like "sing" and "study", is that they can take both preverbal and postverbal LOC's, the meanings of these verbs depending to a large extent on the position of the LOC with respect to the main verb. The test items for the task that tested LOC_{at} and LOC_{to} were ten real Cantonese words and two non-words. The real Cantonese words were "crawl", "jump", "fly", "walk", "push", "carry", "toss", "hit", "swim", and "spill". Each of the twelve words was presented twice, once with a preverbal LOC and once with a postverbal LOC. A pair of such sentences is given in (3). There were a total of twenty-four test sentences. The order of presentation of the sentences was randomized for each subject.

(3) (a) *wou-wou* ***hei*** ***zêng-toi-toi*** ***guo-dou*** *tiu*
dog LocCvb CL-table there jump
"The dog is jumping on the table."

(b) *wou-wou* *tiu-sêng* ***zêng-toi-toi*** ***guo-dou***
dog jump-up CL-table there
"The dog jumped onto the table."

The test items for the task testing LOC_{from} and LOC_{to} were three real Cantonese words, *tiu* "jump", *fei* "fly", and *pa* "crawl", and the two non-words. Examples of test sentences for this task are given in (4).

(4) (a) *wou-wou* ***hei*** ***zêng-toi-toi*** ***guo-dou*** *tiu-log-lei*
dog LocCvb CL-table there jump-down
"The dog is jumping down from the table."

(b) *wou-wou* *tiu-log* ***zêng-toi-toi*** ***guo-dou***
dog jump-down CL-table there
"The dog is jumping down onto the table."

3.1.3 Procedure

The children were first shown the props which consisted of human figures, toy animals and furniture. The younger children were asked to label the props to make sure that they knew the labels. In some cases the children's labels were used in this task. The subjects were asked to act out the experimenter's instructions. Two warm-up items with the verbs "push" and "climb" were given.

3.1.4 Results

Figures 1 and 2 show the means for correct responses in each age group.

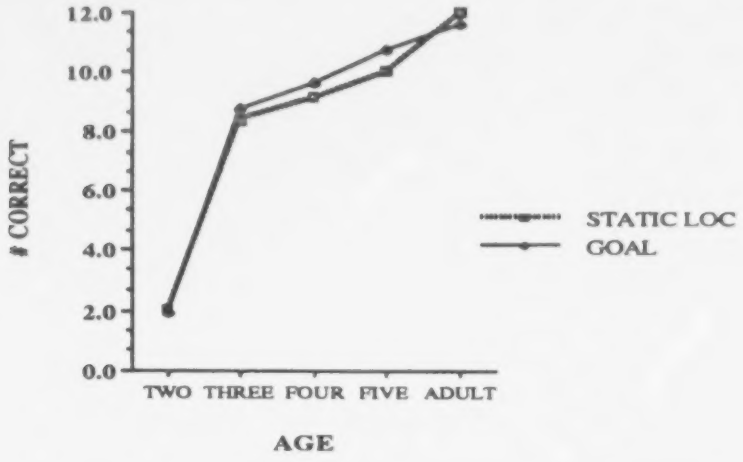

Figure 1: Comprehension of Static Location and Locative Goal.

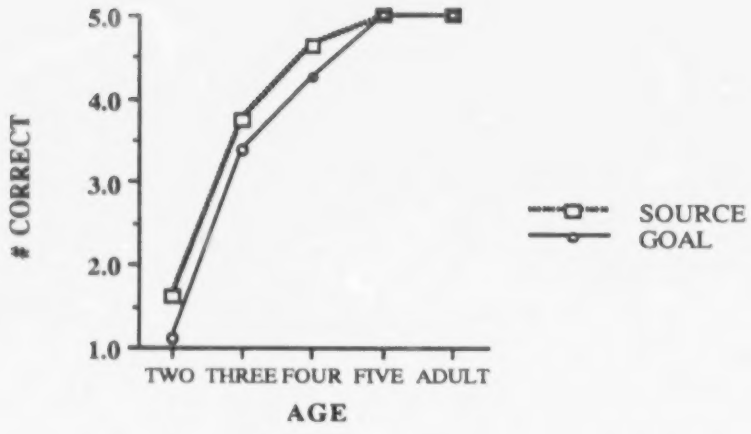

Figure 2: Comprehension of Locative Source and Goal.

The two-year-olds did poorly in both comprehension tasks, as shown by the low means. The older children did a lot better than the two-year-olds. ANOVA's for two-factor experiments with repeated measurements were performed on the comprehension data. In both tasks, the age effect was highly significant (F=68.97 and 39.46; p<.001). Adjacent age groups were contrasted. The results were as follows: (a) the three-year-olds did significantly better than the two-year-olds in both tasks (t=13.64 and 6.11; p<.001); (b) the four-year-olds outperformed the three-year-olds in both tasks (t=1.67 and p<.05 for the task contrasting LOC_{at} and LOC_{to}; t=2.44 and p<.01 for the task contrasting LOC_{from} and LOC_{to}); (c) the difference between the four- and five-year-olds was significant only in the task contrasting LOC_{at} and LOC_{to} (t=2.05; p<.05); (d) the adults did significantly better than the five-year-olds in the task contrasting LOC_{at} and LOC_{to} (t=2.96; p<.001). The position of LOC effect was not statistically significant, and there was no significant interaction between age and position.

3.2 Production Tasks

These tasks elicited production data from the children using the same test items as the two comprehension tasks. Instead of asking the children to act out the experimenter's instruction, they were asked to describe to a blindfolded puppet what the experimenter was doing. The experimenter acted out the sequences described in the test sentences used in the comprehension tasks; each sentence was acted out twice. On the first occasion the experimenter asked the child to watch what she was doing. Then, when she repeated the action sequence, she said to the child, "Tell me what the doggie is doing." Small children very often did not provide her with a locative phrase. When that happened, she tried to elicit the locative phrase by asking "where"questions.

3.2.1 Results

Table 1 shows the proportions of utterances containing a main verb and a locative phrase in the children's spontaneous responses to the instruction "tell me what X is doing" in both production tasks. Sometimes the subjects produced more than one token of LOC to an instruction and all their tokens are included here.

AGE \ POSITION	PREVERBAL	POSTVERBAL
TWO	.03	.97
THREE	.20	.80
FOUR	.52	.48
FIVE	.40	.60
ADULT	.50	.50

Table 1: Proportions of Utterances Containing a Verb and a Preverbal or Postverbal LOC Elicited by "Tell Me What X is Doing."

Almost all the tokens from two-year-olds were postverbal. They came mainly from four children. The main reason was that the two-year-olds did not use word order to differentiate the three kinds of LOC's. When the contexts in which the postverbal LOC's occurred were examined, it was found that some of these LOC's in context referred to LOC_{to}'s, some to LOC_{from}'s and some to LOC_{at}'s. Examples from one of the two-year-olds (Luke) are given in (5):

(5) Luke, 2;1, Male

(a) Task 4, Item 1: "The dog is jumping down from the chair."
pa ***deng-deng*** *a*
crawl chair Prt

(b) Task 2, Item 2: "The baby is crawling (around) on the bed."
pa ***cong-dan*** *a*
crawl sheet Prt

(c) Task 4, Item 4: "The bird is flying down onto the car."
fei ***dai-che*** *a*
fly big car Prt

LOC_{from}, LOC_{at} and LOC_{to} were tested in (5)(a), (5)(b) and (5)(c) respectively, and Luke produced postverbal LOC's in all three cases.

Only two tokens of preverbal LOC's were elicited from the two-year-olds by the instruction "Tell me what X is doing". The two tokens came from two two-year-olds. One token was a LOC_{from} and the other was a LOC_{at}. These two children produced many more postverbal LOC's which, in context, were LOC_{from}'s and LOC_{at}'s. So it is unclear how much weight should be given to these two instances of preverbal LOC's.

The three-year-olds also produced many more postverbal LOC's than preverbal ones. Some of them also made word order errors, but not as frequently as the two-year-olds. There was a considerable amount of variability among the three-year-olds. The more advanced three-year-olds were able to use word order to contrast the three kinds of LOC's, but the less advanced ones were not able to do so. The least advanced three-year-olds made word order errors like a two-year-old child, as shown in (6), where (6)(b) and (6)(c) have the wrong word order:

(6) Mike, 3;0, Male

(a) Task 2, Item 1: "The baby is crawling onto the bed."
pa ***cong***
crawl bed

(b) Task 2, Item 2: "The baby is crawling (around) on the bed."
pa ***cong***
crawl bed

(c) Task 4, Item 12: "The baby is crawling down from the bed."
pa ***cong***
crawl bed

In all three cases, Mike produced a postverbal LOC regardless of whether the experimenter was acting out a LOC_{to}, LOC_{at} or LOC_{from}. In fact, all the locatives this child produced in response to the instruction "Tell me what X is doing" were postverbal. Though he was not using word order to contrast the three LOC types in production, he was using it in comprehension to differentiate the three LOC types. He was correct 79% of the time on the two comprehension tests. He was wrong on only 7 out of the total 34 tokens. Of his 7 errors, 3 of them concerned the LOC_{at}, 3 involved the LOC_{to} and 1 concerned the LOC_{from}. His comprehension was definitely ahead of his production, and this was quite typical of the less advanced three-year-olds.

The four- and five-year-olds produced both preverbal and postverbal LOC's. Most of the LOC's produced by four- and five-year-olds were correct by adult standards; that is, the preverbal LOC's were either LOC_{at}'s or LOC_{from}'s and the postverbal ones were LOC_{to}'s.

Recall that the experimenter asked follow-up "where" questions if the children did not give a LOC in response to the instruction "tell me what X is doing". This was quite often done with the two-year-olds and some of the three-year-olds. The less advanced three-year-olds, who could not use word order spontaneously to contrast the three locative constructions in their spontaneous production, often picked up the word order clues in the experimenter's follow-up questions. The most advanced two-year-olds were sometimes able to alternate between the preverbal and postverbal positions when clues were given in the input. The less advanced children only produced postverbal LOC's regardless of the word order in the input. Two two-year-olds, though, did not even understand "where" questions. But they showed evidence in their spontaneous interactions with the experimenter that they could use the simple construction "NP + Question Particle *ne*" to ask the whereabouts of their parents.

Two two-year-old girls' elicited data were unlike those of the rest of the two-year-olds. One consistently produced preverbal LOC's regardless of the word order of the locative phrase in the experimenter's follow-up questions. Two of her typical responses are reported in (7) below.

(7) Joy, 2;4, Female

(a) Task 2, Item 1: "The baby is crawling onto the bed."

Experimenter:	*bi-bi*	*pa-sêng* ***bin-dou***
	Baby	crawl-up where
Joy:	***ni-dou***	*pa-sêng*
	here	crawl-up

(b) Task 2, Item 9: "He is pushing the little brother onto the sofa."

Experimenter:	*kêu*	*own*	*a-dei-dei*	*log*	***bin-dou***	*a*
	he	push	little-brother	down	where	QuesPrt
Joy:	***ni-dou***	*da-da*	*dei*			
	here	hit-hit	little-brother			

When locations were explicitly questioned, Joy consistently provided the experimenter

with the missing information first. In spontaneous production, she put a LOC after a main verb all the time.

The other girl, Sue, seemed to be contrasting the three kinds of LOC's in some way. She responded with "LOC + Verb" half of the time when the question was about LOC_{from} and LOC_{at}. When LOC_{to} was questioned, though, most of time she responded with a locative pronoun and pointed at the object affected. Examples are given in (8).

(8) Sue, 2;2, Female

(a) Task 2, Item 1: "The baby is crawling onto the bed."

Experimenter: *bi-bi* *pa-sêng-hêu* ***bin-dou*** *a*
Baby crawl-up-go where QuesPrt

Sue: ***ni-dou*** (Pointing at the bed.)
here

(b) Task 2, Item 2: "The baby is crawling (around) on the bed."

Experimenter: *bi-bi* *hei* ***bin-dou*** *pa-pa* *a*
Baby LocCvb where crawl-crawl QuesPrt

Sue: ***ni-dou*** *pa-pa*
here crawl-crawl

4 Discussion

The study reported here focuses on the acquisition of word order in the Cantonese locative system. Two-year-olds did not use word order to differentiate the three types of LOC's in comprehension. Older children could use word order to contrast the three kinds of LOC's. The errors that older children made tended to be with test sentences that contained transitive verbs such as "push" and "throw". For example, one set of sentences tested the contrast between "the boy is throwing a pillow onto the sofa" and "the boy is throwing a pillow on the sofa." The latter sentence is ambiguous in English but it is not so in Cantonese. "On the sofa" is preverbal in Cantonese, and the only adult interpretation possible is "the boy is throwing a pillow and he's doing so on the sofa." Almost half of the older children did not interpret this distinction correctly. Instead, they tended to make the boy throw the pillow *onto* the sofa. As for the two-year-olds, they all missed this item. Their error was quite different: they tended to put the pillow on the sofa and then put the boy on the sofa, pretending that the boy was sleeping there. Other errors made by the older children were with less common directional words, e.g., *mai* "close/toward". One test sentence asked the children to make a dog swim closer and closer to a bowl. Half of the older children made the dog swim into the bowl. None of the adults tested made this mistake.

It was expected that transitive verbs would be harder for the children than intransitives, and they were. Children had to keep track of two entities (an agent and a patient) simultaneously in the case of transitive verbs whereas they only had to deal with one entity in the case of intransitives. Moreover, one class of verbs very similar to verbs of displacement can take both preverbal and postverbal LOC's without affecting the meaning of the sentence in a major way. These are verbs of placement such as "put" and "plant". When these verbs are involved, the position of the LOC is determined primarily by discourse factors. Moreover, the position of the LOC in a sentence does not affect the

end-state of the object being placed. For example, *the book* in the Cantonese preverbal version "he on the table put a book" and *the book* in the Cantonese postverbal version "he put a book on the table" both end up being placed on the table. Since verbs of placement are quite like transitive verbs of displacement, it is perhaps not surprising that Cantonese children take a long time to sort out word order contrasts pertinent to transitive verbs of displacement.

Directional verbs turn out to play an important role in Cantonese children's comprehension of spatial relations. One two-year-old child's (Kit) comprehension data were most revealing. Kit seemed to understand all the tokens of LOC_{from} in the task designed to test subjects' comprehension of this type of LOC phrase. This was strange because the two-year-olds in general did very poorly in the task. Close examination of his data revealed that Kit was actually relying on the directional verb *log-lei* "down" in the test sentences. It turned out that the verb in all the sentences testing the LOC_{from} consisted of a motion verb and the directional verb *log-lei* "down". Kit was paying attention to the directional verb and successfully moved an object from a higher location to a lower one. For example, in hearing the instruction "make the bird fly from the car", he made the bird fly from the car, which was a higher location, to the ground, which was a lower location. There was evidence that he was indeed relying on the directional component "down": when his production data were examined, he was found to be producing the directional verb *log-lei* "down" spontaneously. (For a detailed discussion of the acquisition of directional verbs, see Cheung (1990).)

In spontaneous production, two-year-olds did not use word order to contrast the three locative constructions. Almost all of their spontaneous LOC's were postverbal. The overwhelming preference for the postverbal position is very likely due to the influence of the basic word order in Cantonese - Subject-Verb-Object. The two least advanced two-year-olds didn't even understand simple "where" questions. But they both showed evidence that they could use the simple construction "NP + Question Particle *ne*" to ask the whereabouts of their parents, suggesting that they had some notion of "entity being in a place". The three-year-olds showed considerable variability: the more advanced ones could use word order to contrast the three locative constructions, but the less advanced ones could not. The least advanced three-year-olds made word order errors in production like the two-year-olds, but their comprehension was much better than the two-year-olds. When word order clues were provided in the adult input, the less advanced three-year-olds and the more advanced two-year-olds were able to pick up the clues. One two-year-old incorporated gestures when she contrasted the preverbal and postverbal LOC's. Another two-year-old consistently produced preverbal LOC's in response to questions specifically asking about locations. This child was very likely giving new information first. As for the older children, it is very clear that the four- and five-year-olds used the relevant word order contrasts in production.

Reference

Cheung, Sik Lee. (1990). *The Acquisition of Locative Constructions in Cantonese Children*. Unpublished Doctoral Dissertation, Stanford University, Stanford, California.